Focused Site Inspection Prioritization Report

for

Briggs Manufacturing, Inc.

USEPA ID No. ILD 065 242 935

August 22, 1995

Prepared for
U.S. Environmental Protection Agency
Contract 68-W8-0064
Work Assignment 32-5JZZ

For U.S. Environmental Protection Agency, Region V

Approved by: Alan Altus Date: 9/27/95

For Illinois Environmental Protection Agency

Approved by:_____ Date: _____

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1.0 Introduction

On December 13, 1994, Black & Veatch Waste Science, Inc. (Black & Veatch), the Alternate Remedial Contracting Strategy (ARCS) V contractor, was authorized, by approval of the work plan amendment by the U.S. Environmental Protection Agency (USEPA) Region V, to conduct a focused site inspection prioritization (FSIP) of several sites in Illinois.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) established a federal program for responding to the risks posed by uncontrolled releases of hazardous substances. CERCLA required the federal government to establish criteria for setting priorities among releases or threatened releases, and specified these criteria be used to establish the National Priorities List. USEPA responded to these mandates by developing the Hazard Ranking System (HRS) to more accurately quantify the relative risk posed by hazardous waste substance releases. A revised HRS was published in December 1990.

The objective of the FSIP is to review outstanding screening site inspections (SSIs) performed before the implementation of the revised HRS for which a final decision has not been made regarding further action. The FSIP will determine whether existing SSI information meets a minimum standard to reflect the revised HRS, and if not, it will collect additional information by file review, reconnaissance, and sampling on an as-needed basis. The FSIP will evaluate the threats posed to human health and the environment, and provide sufficient documentation for USEPA to decide the appropriate future course of action (No Further Remedial Action Planned [NFRAP], further evaluation, preparation of HRS Documentation Record).

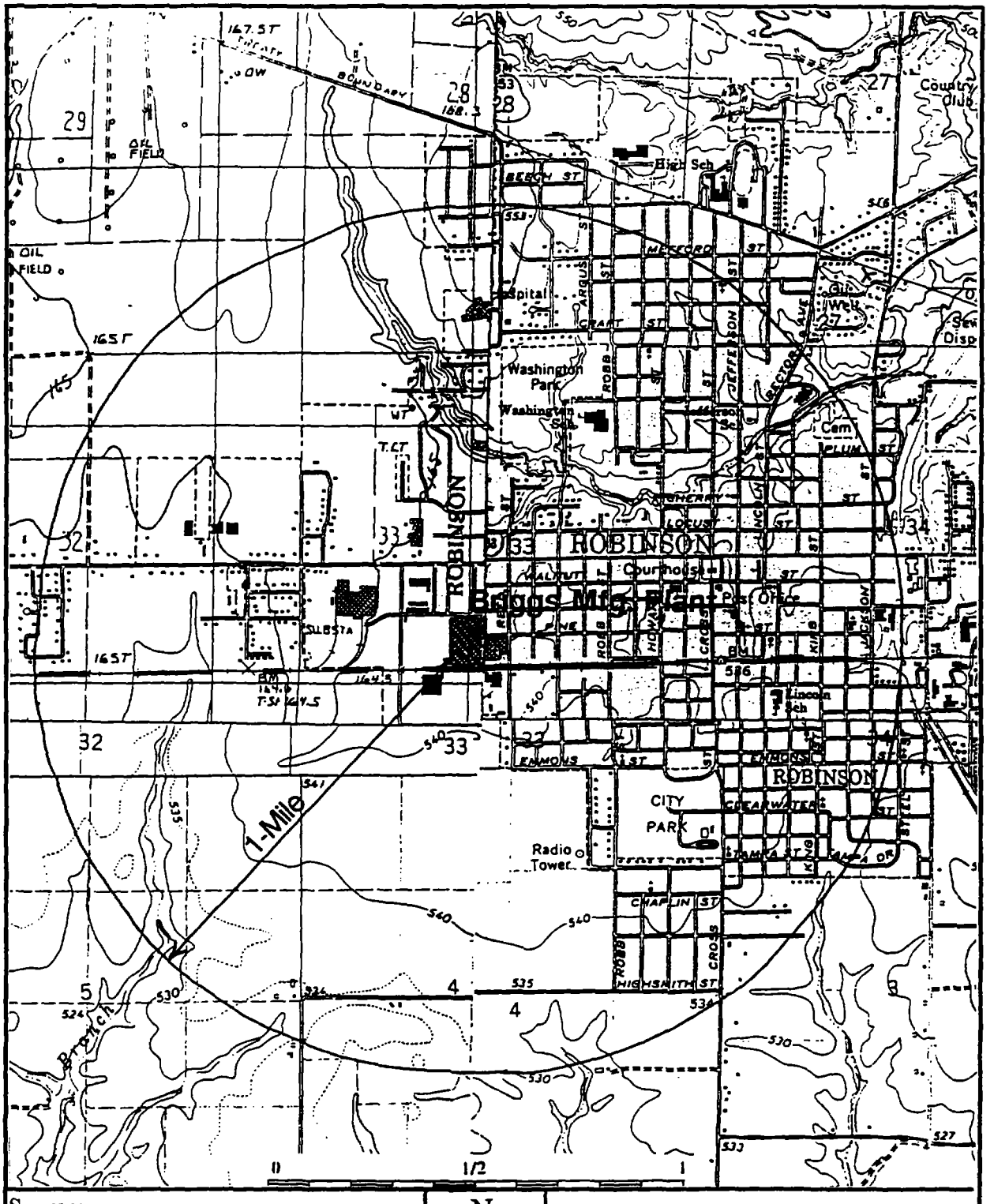
2.0 Site Background

2.1 Site History

Briggs Manufacturing, Inc. (the site) is located at the western boundary of the city of Robinson, Crawford County, Illinois. The site is situated in an industrial and commercial area, but rural areas are located 1 mile west of the site as well as in outlying areas to the north, south, and east of the site. The geographic coordinates of the site are 39° 00' 17.0" North latitude and 087° 45' 00.0" West longitude. Figure 1 is a site location map. Figure 2 is a site sketch.

The site has been developed since at least 1918, but operations associated with Briggs Manufacturing, Inc. commenced in 1972. Briggs Manufacturing, Inc. produces vitreous china for porcelain fixtures, including toilet bowls and sinks. Vitreous china consists of a mixture of barium carbonate, sodium carbonate, sodium silicate, and water. As part of the manufacturing process, waste sludge is generated and deposited into two clay-lined surface impoundments located along the western site perimeter. There are no permits associated with the site's practice of dumping the waste sludge into surface impoundments. Approximately twice a year, the sludge is excavated from the surface impoundments and placed into two unlined sludge piles; one sludge pile is located on the northwestern site corner, and the other sludge pile is located on the southwestern site corner. The site does not maintain a permit for the storage of waste sludge in the two sludge piles. The site generates approximately 700 tons of sludge a year during the manufacturing of vitreous china. The sludge has been designated a "special waste" by the Illinois Environmental Protection Agency (IEPA). There are approximately 300 people employed at the site.

The site has been cited with numerous violations by IEPA, including an unpermitted discharge in 1979 of non-contact cooling water into a storm sewer; a spill in 1981 of between 500 and 900 gallons of fuel oil from a 150,000 gallon fuel tank to a drainage ditch near the site; the accidental spraying in 1981 of a polychlorinated biphenyl (PCB)-containing liquid onto site soils; an oil leak in 1984 from a compressor that discharged into a drainage ditch located adjacent to the site; and two fuel oil leaks (one occurred in 1991, the other occurred in 1992) from underground storage tanks.



Source: U. S. Geological Survey 1964, 1966, 1968, 1985	N	Figure 1 Site Location Map
Scale: 1:24,000		Briggs Manufacturing Plant Robinson, Illinois

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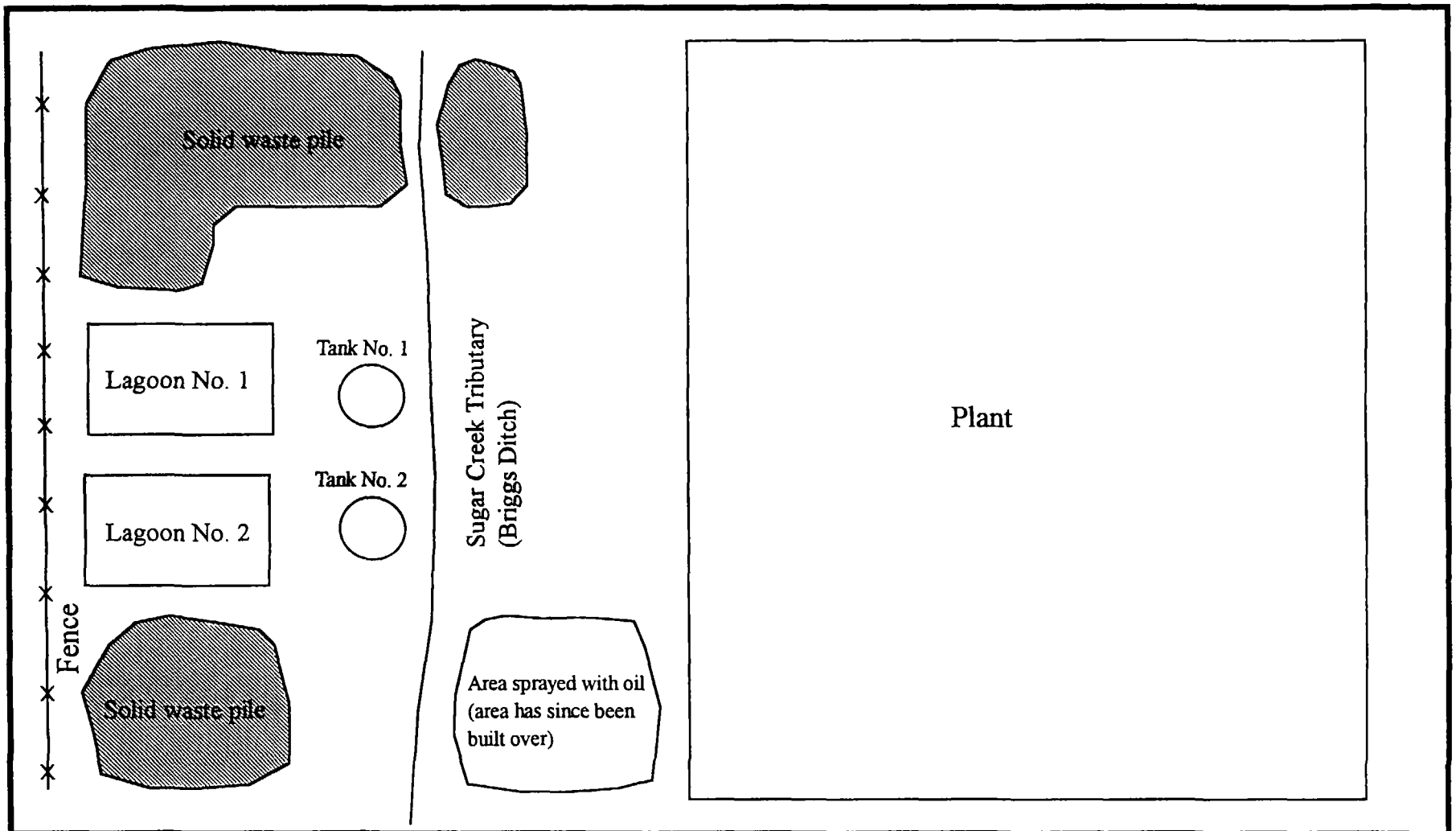

Source: Ecology & Environment 1987	N	Figure 2 Site Sketch
Scale: Not to Scale		Briggs Manufacturing Plant Robinson, Illinois

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The site has repeatedly hauled waste sludge from the property and dumped it onto property located near the city of Hutsonville, Crawford County, Illinois, a practice which has concerned IEPA. The main concern IEPA has raised regarding the dumping of the waste sludge is that the activity has been conducted without a permit. Because the waste sludge has been designated as a "special waste" by IEPA, the practice is subject to regulation. Briggs Manufacturing, Inc., however, insists that the waste sludge is completely innocuous and should not be regarded as a "special waste." Consequently, Briggs Manufacturing, Inc. believes that its dumping practices have been, and continue to be, a legal activity.

2.2 Past Site Characterization Studies

Soil that received PCB-contaminated liquid was sampled by IEPA on July 20, 1981. PCBs were found at concentrations up to 37 milligrams per kilogram (mg/kg). The PCB-contaminated soil was excavated. File material does not indicate if confirmatory sampling was conducted; nevertheless, pavement and a building were constructed on the location of the PCB-contaminated soil. Information concerning confirmatory sampling, undertaken as a result of petroleum spill remedial activities that occurred in 1981, 1984, 1991, and 1992, is not available in the file material.

Ecology and Environment, Inc. (E&E), conducted a screening site inspection (SSI) for USEPA on June 11, 1987. During the SSI, E&E personnel observed that the surface impoundments were lined with clay, and that berms were placed around them. The sludge piles were also observed and described as "large." No other significant observations were made during the SSI, and environmental samples were not collected.

Sludge samples were analyzed by IEPA on three separate occasions; one sample was analyzed on August 26, 1985, another sample was analyzed on November 26, 1990, and a third sample was analyzed on December 30, 1992. The sample analyzed on August 26, 1985 was found to contain barium, lead, and mercury at concentrations of 1,100 micrograms per liter (μg/l), 180 μg/l, and 0.3 μg/l respectively by toxicity extraction procedure. Sample results from 1990 indicated the presence of barium at 3.0 mg/kg, chromium at 0.34 mg/kg, and lead at 0.41 mg/kg by toxicity characteristic leaching potential (TCLP) method. Sample results from 1992 indicated the presence of arsenic at 0.3 mg/kg, barium at 332 mg/kg, chromium at 13 mg/kg, copper at 9 mg/kg, lead at 115 mg/kg, manganese at 61 mg/kg, mercury at 0.1 mg/kg, nickel at 23 mg/kg, silver at 8 mg/kg, and zinc at 196 mg/kg.

In 1986, a survey of the Sugar Creek basin in Crawford County was conducted by IEPA. Surface water and sediment samples were collected, and macroinvertebrate and fish life were evaluated, in order to determine the overall water quality and environmental health of the watershed. Several entities were identified by IEPA as contributing to the degradation of water quality in Sugar Creek and its tributaries; Briggs Manufacturing, Inc. was not among them. Several organic and inorganic constituents were detected in both surface water and sediment samples.

In January 1993, IEPA conducted surface water and sediment sampling of Robinson Creek, a creek adjacent to the site. Two samples were collected in a drainage ditch (designated "Briggs Ditch" in the report). One surface water sample collected in Briggs Ditch contained manganese at 150 μg/l, phenols at 12.3 μg/l, barium at 86 μg/l, and zinc at 79 μg/l. An effluent sample from the site's National Pollutant Discharge Elimination System (NPDES)-permitted outfall in Briggs Ditch indicated the presence of barium at 130 μg/l, manganese at 140 μg/l, and zinc at 77 μg/l. A review of the permitted concentrations indicate that barium levels did not exceed NPDES maximum allowable quantities. Other analytes were not indicated on the NPDES Discharge Monitoring Report. Violations of the NPDES permit were noted by IEPA, however, and included: the lack of receipt of required Discharge Monitoring Reports; the lack of a Progress Report submittal; the lack of a notification of Start of Construction; a notification of Completion of Construction; and, the lack of an Attain Operational Level report. Another surface water sample collected in Briggs Ditch revealed the presence of barium at 72 μg/l, manganese at 110 μg/l, and zinc at 80 μg/l. Background samples for Briggs Ditch were not designated, and presumably not collected.

Historically, the site has had discharges of zinc in its effluent at levels exceeding IEPA effluent standards. Specifically, IEPA sampled the site's effluent on October 19, 1972 which contained 3.3 milligrams per liter (mg/l) of zinc; the IEPA cutoff standard was 1 mg/l at that time. After the site implemented corrective actions, further effluent sampling revealed the site to be in compliance with IEPA effluent standards.

2.3 FSIP Site Reconnaissance/Sampling

The ARCS contractor did not conduct a site reconnaissance or sampling for the Briggs Manufacturing, Inc. site.

3.0 Pathway Evaluation

A review of the records obtained by the ARCS V contractor indicates the landfilled wastes are the site's possible source of contamination. The program evaluated four contaminant transport pathways: groundwater migration, surface water migration, soil exposure, and air migration.

3.1 Groundwater Pathway

Groundwater exists beneath the site at a depth of approximately 30 feet below land surface. The groundwater exists within an unconfined sand and gravel aquifer that has a thickness of approximately 50 feet. There are approximately 331 private groundwater wells located within a 4-mile radius of the site, as determined by a house-count conducted using U.S. Geological Survey topographic quadrangle maps. Residences were evaluated as possessing a private drinking water well if they were located outside areas serviced by municipal water. The Crawford County persons per household multiplier of 2.46 was used to estimate target populations.

3.2 Surface Water Pathway

The nearest surface water body is an unnamed creek that is located approximately 0.5 mile north of the site. Site runoff enters this unnamed creek, which is the probable point of entry (PPE) that constitutes the beginning of the 15-mile surface water migration pathway target distance limit. The unnamed creek flows northeast at a rate of 5 cubic feet per second (cfs) for approximately 1.75 miles before entering Robinson Creek. Robinson Creek flows east at a rate of 9 cfs for approximately 5 miles from its confluence with the unnamed creek (or 6.75 miles from the PPE) before entering Sugar Creek. Sugar Creek flows southeast at a rate of 7 cfs for approximately 4.5 miles from its confluence with Robinson Creek (or 11.25 miles from the PPE) before entering the Wabash River. The Wabash River flows south at a rate of approximately 16,000 cfs. The surface water migration pathway terminates in the Wabash River at a location approximately 3.75 miles south of its confluence with Sugar Creek (a location 15 miles downstream of the PPE).

Recreational fishing most likely does not occur in the unnamed creek, Robinson Creek, or Sugar Creek. The Wabash River is a major recreational area for boating and fishing. There are approximately 4 miles of wetland frontage located along the surface water pathway; no other sensitive environments are known to occur within

15 miles downstream of the PPE. The site lies outside the 500-year floodplain.

3.3 Soil Exposure Pathway

There are no resident populations associated with the site. Briggs Manufacturing, Inc. employs 300 workers. Uncovered waste sludge piles are located in the northwestern and southwestern site corners. Surface impoundments used for the deposition of waste sludge are also uncovered. The population within 1 mile of the site is approximately 2,901.

3.4 Air Pathway

No air contamination has been documented or reported. No air samples have been collected at the site. Approximately 3,891 people live within a 4-mile radius of the site. Sensitive environments within a 4-mile radius include approximately 763 acres of wetlands and one State-designated threatened species.

4.0 Summary

The ARCS V contractor conducted a thorough review of the available files associated with Briggs Manufacturing, Inc. and concluded that the waste piles and surface impoundments constitute possible sources of contamination for several migration pathways. However, based on available file information and conversations with IEPA officials, the sources do not appear to pose a substantial threat to these migration pathways. Based on this information, no samples were collected during the FSIP investigation.

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